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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,027	11/30/2000	Alan F. Graves	12728ROUS01U	9975

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EXAMINER	
PHAN, HANH	
ART UNIT	**PAPER NUMBER**
2633	7

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/726,027	Applicant(s) GRAVES ET AL.	
	Examiner Hanh Phan	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/30/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,9,10,18 and 25-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,9,10,18 and 25-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 05/13/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 9, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiragaki (US Patent No. 5,457,556) in view of Kashima (US Patent No. 6,317,529).

Regarding claims 1 and 25, referring to Figure 8, Shiragaki discloses a protection switching arrangement for optical switching systems comprising:

an optical switch (i.e., optical space switch, Fig. 8) having multiple inputs and multiple outputs and being operable to switch optical channel signals from any one of a plurality of the inputs to any one of the plurality of the outputs;

a plurality of wavelength division demultiplexers (i.e., wavelength division demultiplexers 12-1, 12-2 and 12-3, Fig. 8) coupled at its outputs to the inputs of the optical switching for dividing a composite optical signal into optical channel signals and providing each optical channel signal to the optical switch;

a spare wavelength division demultiplexer (i.e., a spare wavelength division demultilpexer 12-3, Fig. 8) coupled at its outputs to the inputs of the optical switch for dividing a composite optical signal into optical channel signals; and

at least one optical protection switch (i.e., space switch 10, Fig. 8) having a plurality of inputs and a plurality of straight-through outputs and at least one protection output and coupled at each of its straight through outputs to an input of a respective one of the plurality of wavelength division demultiplexers and coupled at its protection output to an input of the spare wavelength division demultiplexer (see col. 8, lines 49-67, col. 9, lines 1-67 and col. 10, lines 1-15).

Shiragaki differs from claims 1 and 25 in that he fails to teach a plurality of optical switching matrices. However, Kashima in Us Patent No. 6,317,529 teaches a plurality of optical switching matrices (Fig. 1, col. 3, lines 5-67 and col. 4, lines 1-67, and see abstract section). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the plurality of optical switching matrices as taught by Kashima in the system of Shiragaki. One of ordinary skill in the art would have been motivated to this since Kashima suggests in column 3, lines 5-67 and col. 4, lines 1-67, and abstract section that using such the plurality of optical switching matrices have advantage of allowing providing a optical switch for switching rapidly a plurality of signals with low signal loss.

Regarding claim 9, Shiragaki further teaches the optical channels are lambdas (Fig. 8).

Regarding claim 26, Shiragaki further teaches the first optical protection switch is operable to couple an input associated with a faulty input demultiplexer to the spare output to enable the spare demultiplexer to serve as a backup for the faulty input demultiplexer (Fig. 8).

4. Claims 10, 18 and 27-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiragaki (US Patent No. 5,457,556) in view of Kashima (US Patent and further in view of Kuroyanagi et al (US Patent No. 6,433,900).

Regarding claims 10, 27 and 28, Shiragaki as modified by Kashima differs from claims 10, 27 and 28 in that it fails to teach a plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the corresponding wavelength division demultiplexers. However, Kuroyanagi in US Patent No. 6,433,900 teaches a plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the corresponding wavelength division de-multiplexers (Figs. 14 and 15, col. 16, lines 4-67 and col. 17, lines 1-35). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the

corresponding wavelength division demultiplexers as taught by Kuroyanagi in the system of Shiragaki modified by Kashima. One of ordinary skill in the art would have been motivated to do this since Kuroyanagi suggests in column 16, lines 4-67 and col. 17, lines 1-35 that using such the plurality of optical protection switches corresponding to the plurality of wavelength division demultiplexers, each optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled at its inputs to the outputs of the corresponding wavelength division de-multiplexers have advantage of allowing providing a highly reliable communication can be secured by changed over the system from the working system to the protection system against breakage of an optical transmission path and failure of an optical transmission apparatus.

Regarding claim 18, Shiragaki further teaches the optical channels are lambdas (Fig. 8).

Regarding claim 29, the combination of Shiragaki, Kashima and Kuroyanagi teaches comprising a plurality of optical switching matrices, each the optical switching matrix having a plurality of inputs and a plurality of outputs, at least one of said optical switching matrices forming a spare optical switching matrix (Fig. 8 of Shiragaki, Fig. 1 of Kashima and Figs. 14 and 15 of Kuroyanagi).

Regarding claims 30 and 31, the combination of Shiragaki, Kashima and Kuroyanagi teaches the inputs of the optical switching matrices are connected to outputs of the second optical protection switches (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 32, the combination of Shiragaki, Kashima and Kuroyanagi teaches the second optical protection switches are operable to couple an input associated with a faulty optical switching matrix to an output associated with the spare optical switching matrix to enable the spare optical switching matrix to serve as a backup for the faulty optical switching matrix (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 33, the combination of Shiragaki, Kashima and Kuroyanagi teaches a plurality of third optical protection switches having inputs connected to the outputs of the optical switching matrices (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 34, the combination of Shiragaki, Kashima and Kuroyanagi teaches each third optical protection switch has its inputs connected to each of the optical switching matrices (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 35, the combination of Shiragaki, Kashima and Kuroyanagi teaches a plurality of multiplexers having inputs connected to outputs of the third optical protection switches (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 36, the combination of Shiragaki, Kashima and Kuroyanagi teaches each multiplexer has a plurality of inputs and an output, and wherein each multiplexer has its inputs connected to outputs of a respective third optical protection switches (Figs. 14 and 15 of Kuroyanagi).

Regarding claim 37, the combination of Shiragaki, Kashima and Kuroyanagi teaches a fourth optical protection switch having inputs connected to outputs of the multiplexers (Fig. 8 of Shiragaki).

Response to Arguments

5. Applicant's arguments with respect to claims 1, 9, 10, 18 and 25-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

Hanh Phan

07/22/2004